

### AMENDMENTS TO THE CLAIMS

This listing replaces all prior versions and listings of claims in the application.

#### Listing of Claims

1. (Cancelled)
2. (Currently amended) An isolated antibody binding to 40-kDa [[OMP]] outer membrane protein or a functional fragment ~~thereof~~ of the antibody, which has (1) activity of inhibiting the coaggregation of *P. gingivalis* and (2) activity of promoting human neutrophilic phagocytosis.
3. (Cancelled)
4. (Cancelled)
5. (Cancelled)
6. (Currently amended) The isolated antibody or the functional fragment ~~thereof~~ of the antibody according to claim 2, wherein the coaggregation of *P. gingivalis* is coaggregation of *P. gingivalis* and *Actinomyces viscosus*.
7. (Currently amended) An isolated antibody ~~binding to 40-kDa OMP~~ or a functional fragment ~~thereof~~ of the antibody according to claim 2, which has activity of suppressing alveolar bone resorption due to *P. gingivalis*.
8. (Currently amended) The isolated antibody or the functional fragment ~~thereof~~ of the antibody according to claim 2, wherein the antibody is a human antibody.
9. (Currently amended) The isolated antibody or the functional fragment ~~thereof~~ of the antibody according to claim 2, which is produced by a mouse-mouse hybridoma.
10. (Currently amended) The isolated antibody or the functional fragment ~~thereof~~ of the antibody according to claim 2, wherein the antibody is a monoclonal antibody.

11. (Currently amended) The isolated antibody or the functional fragment ~~thereof~~ of the antibody according to claim 2, which covalently or non-covalently ~~binds~~ conjugates to a therapeutic agent.

12. (Currently amended) The isolated antibody or the functional fragment ~~thereof~~ of the antibody according to claim 11, wherein the therapeutic agent is selected from antibiotics or antibacterial agents.

13. (Currently amended) The isolated antibody or the functional fragment ~~thereof~~ of the antibody according to claim 12, wherein the antibiotic or the antibacterial agent is tetracycline or minocycline.

14. (Currently amended) The isolated antibody or the functional fragment ~~thereof~~ of the antibody according to claim 2, wherein the antibody class is IgG.

15. (Currently amended) The isolated antibody or the functional fragment ~~thereof~~ of the antibody according to claim 14, wherein IgG is IgG1.

16. (Currently amended) The isolated antibody or the functional fragment ~~thereof~~ of the antibody according to claim 2, wherein the antibody class is IgA.

17. (Currently amended) The isolated antibody or the functional fragment ~~thereof~~ of the antibody according to claim 2, wherein the amino acid sequence of a heavy chain constant region is altered.

18. (Currently amended) An isolated antibody binding to 40-kDa [[OMP]] outer membrane protein or a functional fragment ~~thereof~~ of the antibody, which is produced by a hybridoma h13-17 (accession No. FERM BP-8325).

19. (Currently amended) An isolated antibody binding to 40-kDa [[OMP]] outer membrane protein or a functional fragment ~~thereof~~ of the antibody, which comprises variable regions of an antibody that is produced by a hybridoma h13-17 (accession No. FERM BP-8325).

20. (Currently amended) The isolated antibody or the functional fragment ~~thereof~~ of the antibody according to claim 18 or 19, which covalently or non-covalently ~~binds~~ conjugates to a therapeutic agent.

21. (Currently amended) The isolated antibody or the functional fragment ~~thereof~~ of the antibody according to claim 20, wherein the therapeutic agent is selected from antibiotics or antibacterial agents.

22. (Currently amended) The isolated antibody or the functional fragment ~~thereof~~ of the antibody according to claim 21, wherein the antibiotic or the antibacterial agent is tetracycline or minocycline.

23. (Currently amended) The isolated antibody or the functional fragment ~~thereof~~ of the antibody according to 18 or 19, wherein the antibody class is IgG.

24. (Currently amended) The isolated antibody or the functional fragment ~~thereof~~ of the antibody according to claim 23, wherein IgG is IgG1.

25. (Currently amended) The isolated antibody or the functional fragment ~~thereof~~ of the antibody according to claim 18 [[or 19]], wherein the antibody class is IgA.

26. (Currently amended) The isolated antibody or the functional fragment ~~thereof~~ of the antibody according to claim 18 or 19, wherein the amino acid sequence of a heavy chain constant region is altered.

27. (Original) A hybridoma h13-17 (accession No. FERM BP-8325).

28. (Currently amended) An isolated antibody binding to 40-kDa [[OMP]] outer membrane protein or a functional fragment ~~thereof~~ of the antibody, which is produced by a hybridoma 5-89-2 (accession No. FERM BP-8323).

29. (Currently amended) An isolated antibody binding to 40-kDa [[OMP]] outer membrane protein or a functional fragment ~~thereof of the antibody~~, which comprises variable regions of an antibody that is produced by a hybridoma 5-89-2 (accession No. FERM BP-8323).

30. (Currently amended) The isolated antibody or the functional fragment ~~thereof of the antibody~~ according to claim 28 or 29, which covalently or non-covalently ~~binds~~ conjugates to a therapeutic agent.

31. (Currently amended) The isolated antibody or the functional fragment ~~thereof of the antibody~~ according to claim 30, wherein the therapeutic agent is selected from antibiotics or antibacterial agents.

32. (Currently amended) The isolated antibody or the functional fragment ~~thereof of the antibody~~ according to claim 31, wherein the antibiotic or the antibacterial agent is tetracycline or minocycline.

33. (Currently amended) The isolated antibody or the functional fragment ~~thereof of the antibody~~ according to claim 28 or 29, wherein the antibody class is IgG.

34. (Currently amended) The isolated antibody or the functional fragment ~~thereof of the antibody~~ according to claim 33, wherein IgG is IgG1.

35. (Currently amended) The isolated antibody or the functional fragment ~~thereof of the antibody~~ according to claim 28 [[or 29]], wherein the antibody class is IgA.

36. (Currently amended) The isolated antibody or the functional fragment ~~thereof of the antibody~~ according to claim 28 or 29 wherein the amino acid sequence of a heavy chain constant region is altered.

37. (Original) A hybridoma 5-89-2 (accession No. FERM BP-8323).

38. (Currently amended) An isolated antibody binding to 40-kDa [[OMP]] outer membrane protein or a functional fragment ~~thereof~~ of the antibody, which is produced by a hybridoma a44-1 (accession No. FERM BP-8324).

39. (Currently amended) An isolated antibody binding to 40-kDa [[OMP]] outer membrane protein or a functional fragment ~~thereof~~ of the antibody, which comprises variable regions of an antibody that is produced by a hybridoma a44-1 (accession No. FERM BP-8324)[[:]].

40. (Currently amended) The isolated antibody or the functional fragment ~~thereof~~ of the antibody according to claim 38 or 39, which covalently or non-covalently ~~binds~~ conjugates to a therapeutic agent.

41. (Currently amended) The isolated antibody or the functional fragment ~~thereof~~ of the antibody according to claim 40, wherein the therapeutic agent is antibiotics or antibacterial agents.

42. (Currently amended) The isolated antibody or the functional fragment ~~thereof~~ of the antibody according to claim 41, wherein the antibiotic or the antibacterial agent is tetracycline or minocycline.

43. (Currently amended) The isolated antibody or the functional fragment ~~thereof~~ of the antibody according to claim 38 or 39, wherein the antibody class is IgG.

44. (Currently amended) The isolated antibody or the functional fragment ~~thereof~~ of the antibody according to claim 43, wherein IgG is IgG1.

45. (Currently amended) The isolated antibody or the functional fragment ~~thereof~~ of the antibody according to claim 38 [[or 39]], wherein the antibody class is IgA.

46. (Currently amended) The isolated antibody or the functional fragment ~~thereof~~ of the antibody according to claim 38 or 39, wherein the amino acid sequence of a heavy chain constant region is altered.

47. (Original) A hybridoma a44-1 (accession No. FERM BP-8324).

48. (Cancelled)

49. (Currently amended) A protein encoded by the nucleic acid ~~according to claim 48~~  
possessed by a hybridoma selected from the group consisting of a hybridoma h13-17 (accession No. FERM BP-8325), a hybridoma 5-89-2 (accession No. FERM BP-8323), and a hybridoma a44-1 (accession No. FERM BP-8324) and encodes an antibody containing a variable region of an antibody produced by the hybridoma or a functional fragment of the antibody, which is an antibody or a functional fragment thereof of the antibody.

50. (Cancelled)

51. (Cancelled)

52. (Cancelled)

53. (Cancelled)

54. (Currently amended) An agent for suppressing alveolar bone resorption due to *P. gingivalis*, which contains an antibody binding to 40-KDa [[OMP]] outer membrane protein or a functional fragment thereof of the antibody as an active ingredient.

55. (Cancelled)

56. (Cancelled)

57. (Cancelled)

58. (Cancelled)

59. (Cancelled)

60. (Cancelled)

61. (Currently amended) An agent for suppressing alveolar bone resorption due to *P. gingivalis*, which contains the antibody or the functional fragment ~~thereof~~ of the antibody according to any one of claims 2 and 6-17 as an active ingredient.

62. (Cancelled)

63. (Cancelled)

64. (Cancelled)

65. (Cancelled)

66. (Cancelled)

67. (Currently amended) An agent for suppressing alveolar bone resorption due to *P. gingivalis*, which contains the antibody or the functional fragment ~~thereof~~ of the antibody according to any one of claims 18 to 26, ~~[[19,]]~~ 28 to 36, ~~[[29,]]~~ and 38 to 46 ~~and 39~~ as an active ingredient.